



Missouri State Freight Plan

EXECUTIVE SUMMARY





Missouri's multimodal freight system supports the movement of trucks, planes, barges, and trains as they transport more than 1 billion tons of freight valued at over \$1.2 trillion per year.

EVERY DAY IS A FREIGHT DAY IN MISSOURI

We're at the crossroads of the nation - and freight movement is vital to our State.

As a critical element in the Missouri economy, it is important to have a plan to make sure we keep freight - and the Missouri economy - moving smoothly.

It's through our freight transportation system that Missouri products like soybeans and aviation parts are transported around the world. Making smart investments in that system can help provide better options for Missouri businesses to get their products to market. An improved freight transportation system can also lower transportation costs and create jobs.

While the good news is that Missouri has an integrated multimodal freight system that facilitates the efficient, reliable, and safe movement of freight, our challenge will be to maintain and expand the system to meet the needs of tomorrow.

Building on Missouri's Long Range Transportation Plan and with the help of hundreds of key stakeholders, MoDOT has drafted this vision and plan for taking care of its existing freight system and making the best and most strategic investments possible when funds are available.

The Freight Plan's Goals:

Maintenance: Maintain the freight system in good condition by keeping highways and bridges in good condition and supporting the maintenance of railways, waterways, airports, and multimodal connections.

Safety: Improve safety on the freight system by decreasing the number and severity of crashes involving commercial vehicles and improving safety at railroad crossings.

Economy: Support economic growth and competitiveness in Missouri through strategic improvements to the freight system.

Connectivity and Mobility: Improve the connectivity and mobility of the freight system by reducing congestion and increasing reliability on the roadways; by supporting improved efficiency of rails, waterways, and airports; and by improving connections between freight modes.

Strategic Considerations:

Missouri's Long Range Transportation Plan also includes three strategic considerations that have been incorporated into this Freight Plan:

Environmental: Reduce and/or mitigate the adverse environmental impacts of freight.

Organizational and Process: Institute policies and practices that support the freight system, such as exploring funding flexibility and stability and using technology to improve operations on the freight system.

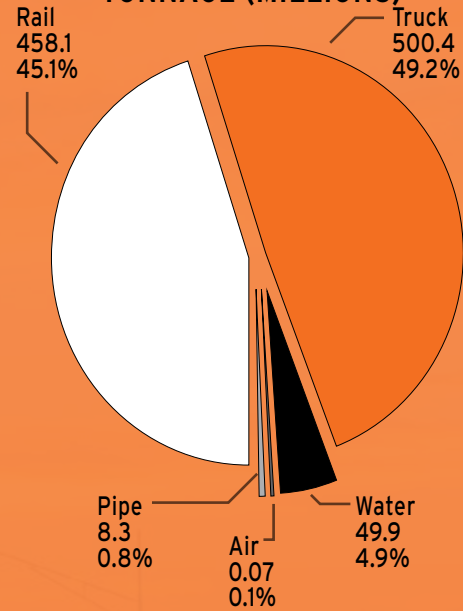
Customers and Partners: Improve coordination and collaboration with freight stakeholders.

PLANNING FOR THE FUTURE OF FREIGHT IN MISSOURI

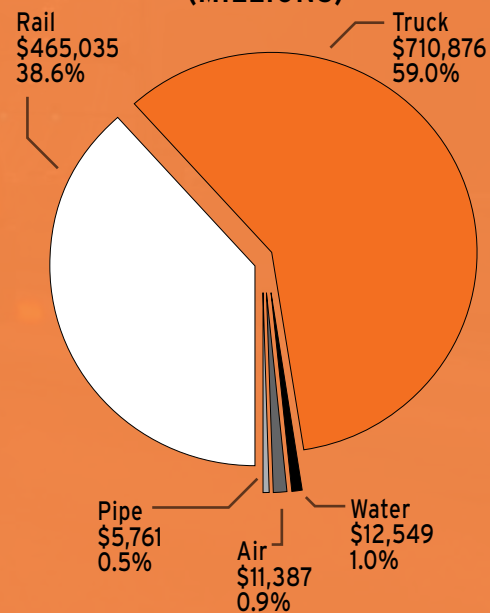
MoDOT developed this State Freight Plan through a collaborative process to assess the State's existing freight system, establish goals and strategies for updating the system over the next 10+ years, develop guidance for future investments in transportation, and prioritize freight projects that will provide the most economic benefits to the State.

Developing this plan meets the federal requirements outlined in the Moving Ahead for Progress in the 21st Century Act (MAP-21) and aligns with the National Freight Goals. It is also well-timed to guide MoDOT leaders through the challenges of maintaining the existing freight infrastructure and investing in new projects to accommodate growing freight volumes transported throughout the State.

FREIGHT MOVEMENT BY TONNAGE (MILLIONS)



FREIGHT MOVEMENT BY VALUE (MILLIONS)



2011, Transearch data

In Missouri, trucks transport the largest share of freight by weight and value, but are closely followed by rail.

A combination of waterborne, air, and pipeline comprise a minority of freight movements.

MISSOURI'S FREIGHT SYSTEM

CROSSROADS OF AMERICA

Missouri is at the freight crossroads of America. As the geographic center and the demographic center of population for the United States, Missouri is well positioned as the country's freight nexus.

Missouri does the heavy lifting every day for freight mobility - manufacturing, agriculture, mining, distribution, logistics -- and serves as a "connector" state that holds the region and the nation together.

Being a connector state means that the majority of freight moving across the state's transportation networks is truck- and rail-based pass-through traffic. The main commodities are rail-based coal and truck-based secondary traffic (i.e., transportation of goods to additional locations between the point of origin and final destination, such as warehouses or distribution centers). Commodities that are increasing include automotive, agriculture, energy, and bulk products. In 2011, nearly 600 million tons of pass-through freight moved through Missouri, making up nearly 59 percent of the total tonnage of goods moved through the State. It is projected that the pass-through traffic will increase in the future, reinforcing the role of Missouri as a connector state.

Current and Future Challenges:

Over the next 20 to 30 years, the growth of freight transportation throughout the nation is expected to continue to accelerate. The reduction and unpredictability of funds needed to maintain and improve transportation networks makes it much more difficult to continue to improve the supply chain. All modes continue to experience congestion along major corridors and at key bottlenecks, such as critical interstate highway interchanges; outdated and under-designed locks, dams, and ports; and at two of the largest rail terminals: Kansas City and St. Louis.



7th
largest highway
system in the U.S.

Missouri has the seventh largest highway system in the U.S. with 33,700 centerline miles of roadway. Missouri's major highways encompass just 20 percent of the State highway miles, but carry 80 percent of the system's traffic.

4,200
miles of class 1 main track rail lines

Missouri has six Class 1 freight railroads operating 4,200 miles of main track rail lines and approximately 5,700 public and private rail-highway crossings within the State.

425
miles of short line track rail lines

A total of five short line railroads serve Missouri. These systems include a total of 425 track miles.

1,050 miles of
navigable
rivers

The State of Missouri contains 1,050 miles of navigable rivers. A total of 14 public port authorities and more than 200 private ports can be found along Missouri's waterways.

3 of the top 106
cargo airports in
North America

Missouri is home to three of the top 106 cargo airports in North America in terms of total tonnage in 2013: Kansas City (#37: 99,354 tons), St. Louis (#56: 64,557 tons), and Springfield (#106: 12,693 tons).

10,700
miles of pipelines

Approximately 10,700 miles of pipelines move natural gas, crude oil, and petroleum products throughout Missouri.

115
intermodal facilities

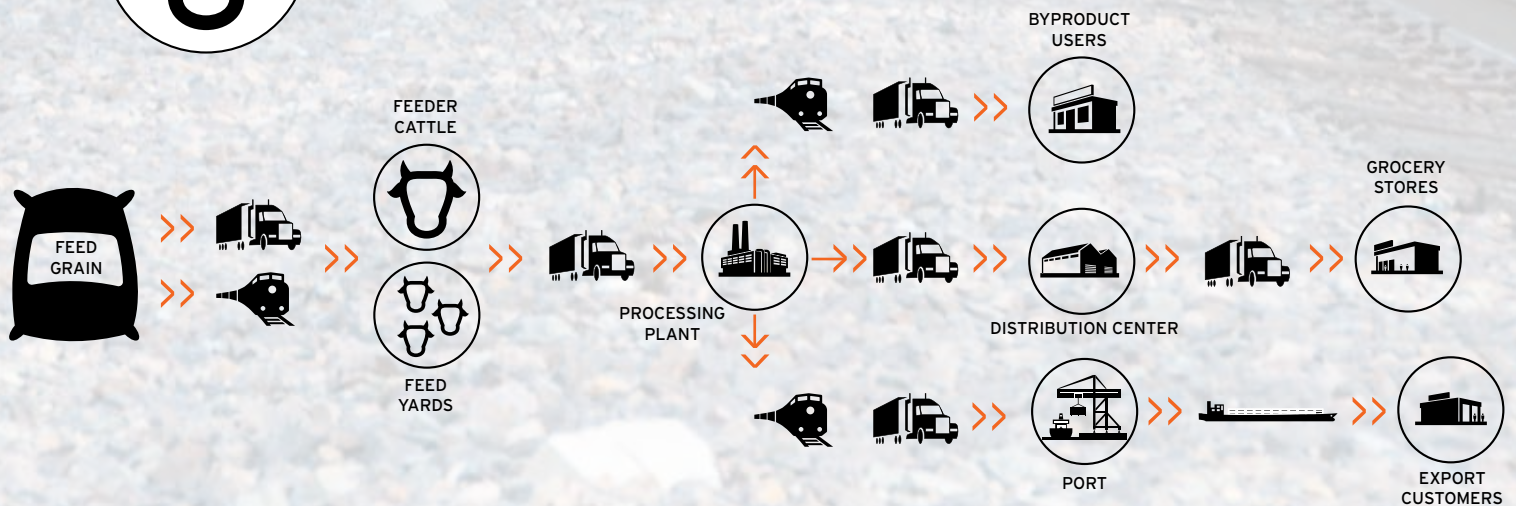
There are 115 intermodal facilities located in Missouri that provide a variety of intermodal interactions. Most of these facilities (71 percent) accommodate rail-truck commodity transfers, followed by modal transfers at waterports (16 percent) and airports (8 percent).

More than 150 years ago, cargo moved on horse-drawn wagons as goods were brought across the Mississippi River to reach the early Missouri settlements of St. Louis, Cape Girardeau, and other river towns.

Today, wagons and horses have been replaced by trucks, locomotives, boats, airplanes, and pipelines. But one thing remains: the ability to move freight continues to be essential to Missourians' economic prosperity and quality of life.



MISSOURI SUPPLY CHAIN: BEEF




ECONOMIC IMPACT OF FREIGHT **TO THE STATE OF MISSOURI**

Freight is key to Missouri's economic prosperity because freight is the economy in motion. Efficient and reliable supply chains allow businesses to get the right products to the right people at the right time and at a reasonable cost. If freight stops, the economy stops.

Approximately half of Missouri's economy is substantially affected by freight, either through the direct movement of freight or the use of freight systems. Everyone relies on freight on a daily basis. Freight movement and Missouri's freight system support the State's economy by:

- Allowing Missouri manufacturers to bring in raw materials and parts and transport products to and from other parts of the State and around the world.
- Allowing farmers and agricultural producers to get products to market and bring feed, seed, and equipment to their farms.
- Ensuring that the goods Missouri residents need are available in local stores or can be delivered to their homes.
- Employing approximately 83,500 people in Missouri's transportation and warehousing industries, and numerous others in related industries.



Truck tonnage is forecast to increase from 500 million in 2011 to 778 million in 2030, an increase of 55.6 percent.

Missouri waterways provide low-cost transportation and move an average of \$12.5 billion in cargo per year.

City of St. Louis Port is the second largest inland port in the U.S. by trip-ton-miles and the third largest by tonnage.

Kansas City International Airport (MCI) is the busiest airport in annual air cargo tonnage in Missouri.

Missouri has the second and third largest rail freight hubs in the country. Rail commodity value is forecast to increase from \$465.0 billion in 2011 to \$790.6 billion by 2030, an increase of 70 percent.

ECONOMIC IMPACT OF FREIGHT

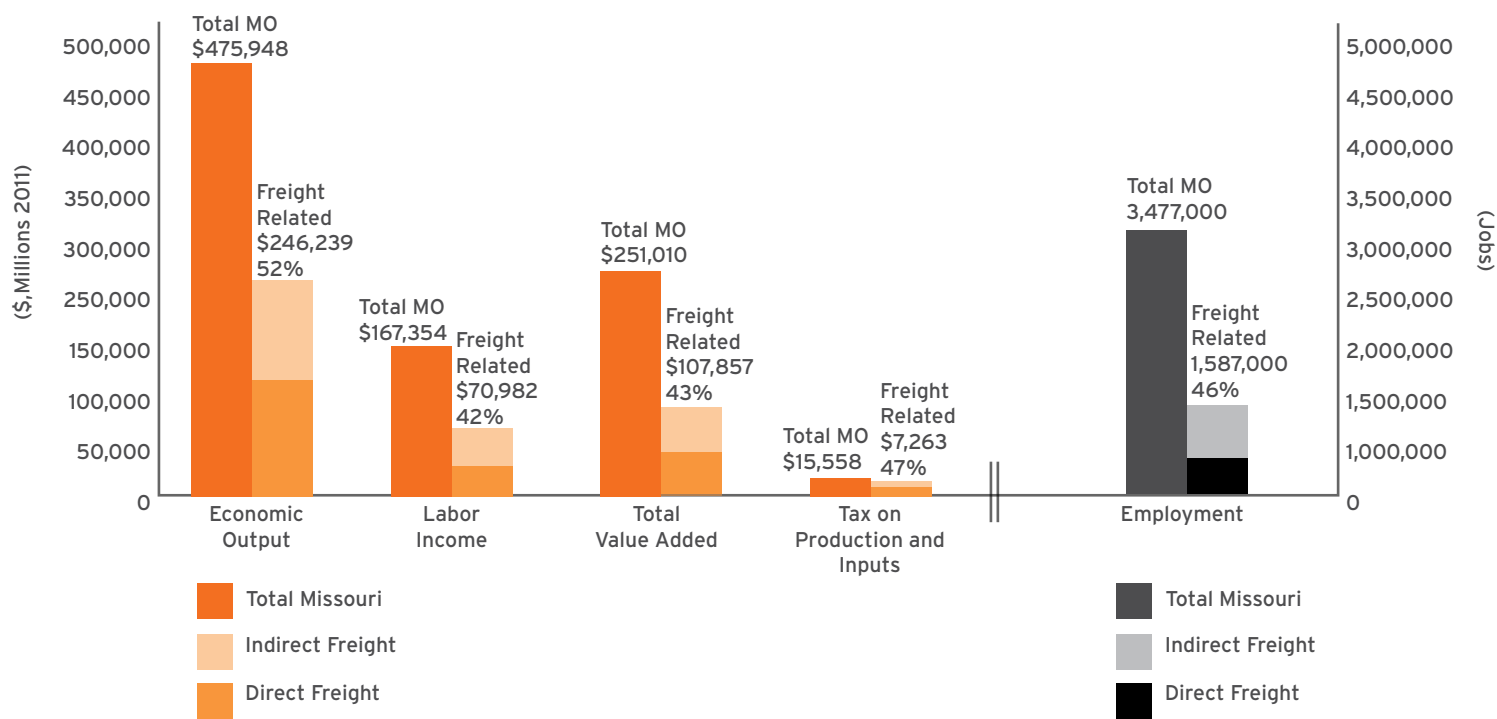
TO THE STATE OF MISSOURI

As the importance of trade and the demands of customers continue to evolve, Missouri companies often find freight to be an increasingly important factor in sustaining and enhancing their competitive position in the marketplace. They need reliable connections to customers and links to a multitude of markets to ensure timely deliveries of goods and services.

Currently, Missouri's freight system works well. A substantial amount of Missouri's freight activity occurs in the Kansas City and St. Louis metropolitan areas, and most of the bottlenecks occur there as well. However, these bottlenecks are far less severe than those in other areas across the U.S. Bottlenecks significantly impact freight transportation service providers and transportation users through lost hours by drivers and equipment stuck in congestion, the inability to meet delivery

and production schedules, and additional costs due to lack of reliability in the freight system. Strategizing ways to relieve those bottlenecks in the busy metro areas is important, but it's also important to keep in mind that valuable freight moves through every community in Missouri, so identifying and prioritizing the rural freight corridors and connectors is also a high priority.

So, while the current system does work well in the majority of cases and during the majority of the time, it's important to keep an eye to the future. By 2030, total freight tonnage moved along Missouri's freight system is estimated to increase 37 percent, with the largest growth estimated in air freight (91 percent) and truck freight (56 percent). With that kind of growth, a plan like this one is critical to keeping freight, and the economy, moving.





"The ability to access multiple modes of transportation can increase the profitability and the efficiency of a business. For example, Trinity Industries is the largest employer in Pemiscot County. The company consumes nearly 200,000 tons of steel annually. The ability of Trinity to access steel from both the inland waterway system and the rail system that the Port Authority provides and the Interstate highway system, leads to both efficiency and profitability for Trinity."

JOHN FERGUSON II
VICE PRESIDENT
PEMISCOT COUNTY PORT AUTHORITY

STAKEHOLDER OUTREACH

LISTENING TO MISSOURIANS

Hundreds of freight stakeholders were involved in helping MoDOT create the Missouri State Freight Plan through outreach efforts focused on logistics directors, carriers, shipping managers, economic development professionals, and leaders of private industry. Interacting with the people who use the system was critical to learning about the conditions, issues, and needs of the freight network.

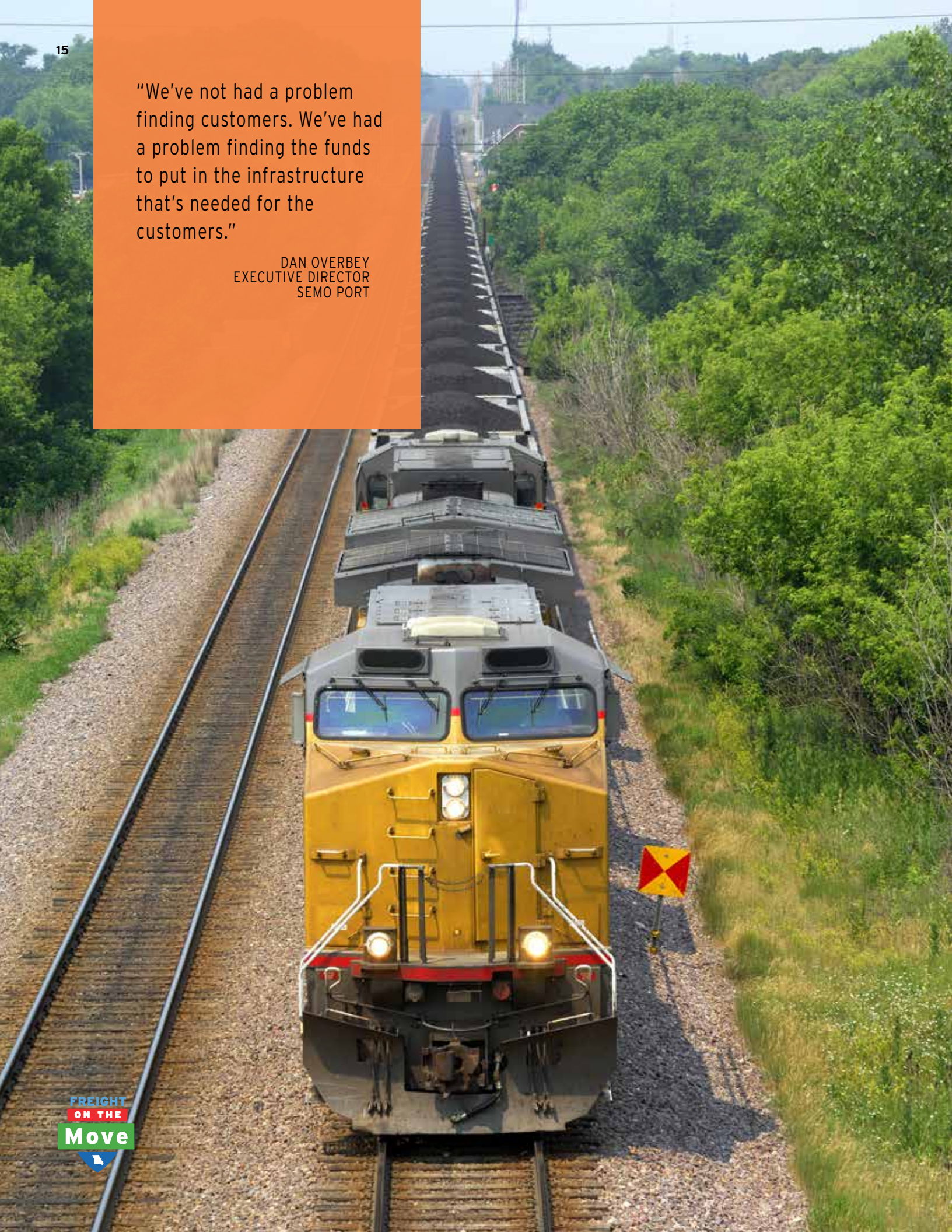
From November 2013 to July 2014, MoDOT engaged key freight stakeholders via surveys, interviews, multiple rounds of forums, and direct/grassroots outreach throughout the State. All activities were guided by the Freight Steering Committee made up of key stakeholders and MoDOT leadership. Stakeholder input influenced each piece of the Freight Plan, from the development of a prioritized project list to policy recommendations. This outreach process illustrates a unified effort by private and public stakeholders to develop a pragmatic freight mobility plan for Missouri.

The goals of this stakeholder outreach were to:

- Better understand, as an agency and as a State, what the costs are to Missouri's economy if the freight network stagnates or deteriorates.
- Articulate what freight projects would be most helpful to the State if additional funds were made available.
- Collect thoughts on making businesses and communities more competitive - whether through improvement projects or policy changes.

"We've not had a problem finding customers. We've had a problem finding the funds to put in the infrastructure that's needed for the customers."

DAN OVERBEY
EXECUTIVE DIRECTOR
SEMO PORT



STAKEHOLDER OUTREACH

LISTENING TO MISSOURIANS

Throughout the State several themes emerged during stakeholder outreach, including:

- Missouri generally has a well-connected road network. It is good until there is a hiccup, such as congestion, weather, or construction. However, there is a need for capacity and maintenance improvements to maintain the reliability of the network interstates and minor routes.
- There is a need to integrate freight networks for better multimodal connectivity.
- There is a need to investigate ways to better use Missouri's waterways, including taking advantage of Panama Canal expansion opportunities, increasing the use of dredging, and updating locks and dams on the Mississippi River.
- There is a need to actively engage and reach out to all stakeholders, both public and private.

1

Maintain and improve the freight network

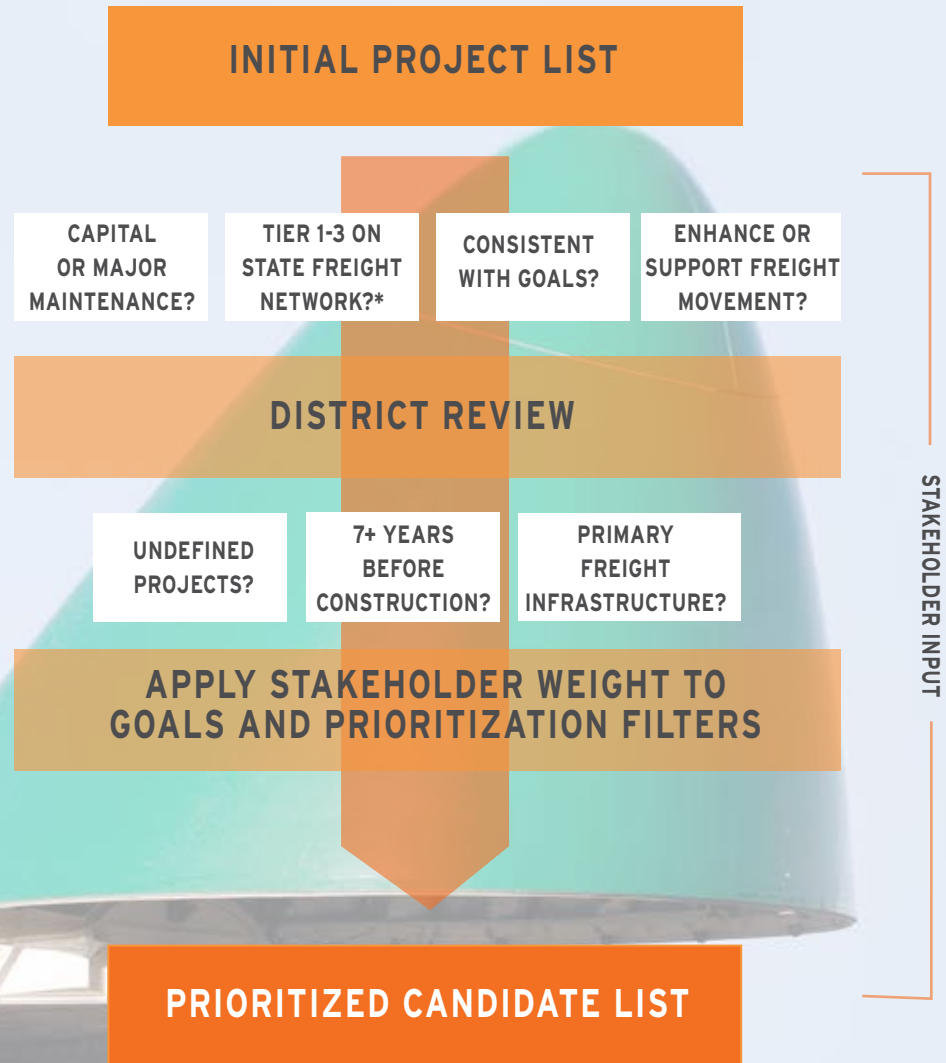
Maintain and improve the designated Missouri Freight Network (page 30) to ensure the freight system continues to move toward achieving the transportation goals identified in the Missouri Long Range Transportation Plan and the Missouri State Freight Plan. Missouri needs to further evaluate alternative funding and financing sources to make certain the Missouri freight system is preserved and maintained, and critical high priority improvements are implemented.

2

Use freight prioritization framework to assist decision-makers

Use MoDOT's freight project prioritization framework to help decision-makers prioritize future investments on the freight network. The MoDOT freight prioritization process, developed as a part of this Freight Plan, provides a framework for evaluating and prioritizing key multimodal freight projects, using both quantitative and qualitative data and analysis. MoDOT should continue to expand the MoDOT Tracker performance measures and consider incorporating future data into the prioritization process, and should work with its modal offices to identify other freight data needed to support the prioritization process.

FREIGHT PROJECT PRIORITIZATION FRAMEWORK



*HIGHWAY PROJECTS ONLY

3

Expand
collaboration
with MDED and
other partners

Expand ongoing collaboration with the Missouri Department of Economic Development (MDED) to address specific freight transportation needs of targeted industries. Identify clusters of targeted industries within the State and the transportation issues facing each industry sector. Work with MDED, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions (RPCs), and regional economic development agencies to develop and fund projects that will address the transportation needs of these industry clusters.

4

Develop
supportive
freight and land
use guidance

Assist in developing freight and land use guidance to facilitate creation of freight supportive land use policies and guidelines to ensure practical freight considerations are incorporated in local planning and design efforts, promote good neighbor development strategies for freight facilities, support safe practices, and help communities and local government better understand how land use practices can improve freight and community development linkages.

5

Increase
public
awareness
about freight

Increase public awareness about economic development and freight. Education that clearly establishes the link between Missouri's freight system, the State's economy, and community sustainability is a key factor in future freight infrastructure funding.

6

Continue
engaging
statewide
economic
development
partners

Continue to engage the Missouri Chamber of Commerce, Missouri Economic Development Council (MEDC), Missouri Association of Manufacturers, private sector freight stakeholders, MPOs and RPCs, and related organizations to develop a public information exchange with MPOs, RPCs, planning organizations, economic development agencies, and other State, regional, and local groups about the role of freight transportation in the State and regional economy.

7

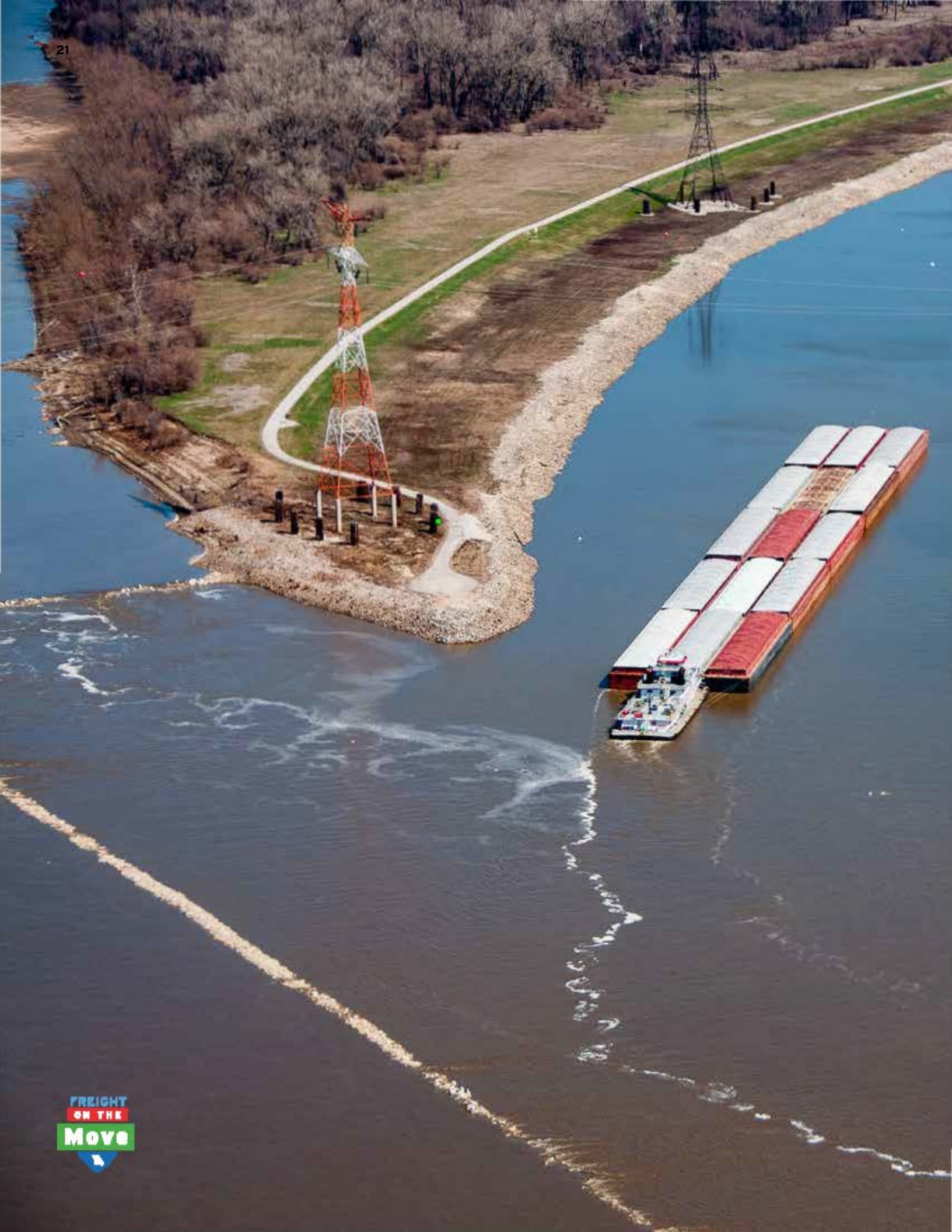
Host
annual freight
roundtable

Host an annual Freight and Economic Development Roundtable to enhance the exchange of information and communicate about current freight and economic development issues and opportunities.

8

Consider
developing
public-
private
partnerships

Consider developing public-private partnerships to support freight infrastructure, terminals, and intermodal facilities improvements critical to the State that may not solely align with private investment criteria. Specifically MoDOT to assist to strengthen first and last mile connections.



9

Identify and
preserve
critical multi-
modal nodes

Identify and preserve critical multimodal freight-intensive development nodes and adjoining industrial land assets. This companion program to the Missouri Certified Sites Program would focus on identifying and preserving key locations where strategic multimodal freight assets and available industrial land could be reserved for future freight-intensive development such as intermodal freight terminals and major manufacturing facilities including aerospace, automotive, and similar operations.

10

Partner
with others
involved in
certified site
program

Partner with agencies already involved in the certified site program, including MEDC and regional power utility firms. MoDOT freight staff and private transportation partners could provide geographic information system data and valuable information from the Freight Plan to be integrated with site and non-transportation infrastructure data.

FREIGHT PLAN GOALS

RECOMMENDED MEASURES

MAINTENANCE:

Maintain the freight system in good condition

- Percent of the major highways in good condition*
- Percent of structurally deficient deck area on NHS bridges*

SAFETY:

Improve safety on the freight system

- Number of commercial vehicle crashes resulting in fatalities and serious injuries*
- Rail crossing crashes and fatalities*

ECONOMY:

Support economic growth and competitiveness

- Goods movement competitiveness*
- Job and economic growth by key sector including:
 - Agriculture
 - Manufacturing
 - Transportation/Logistics

CONNECTIVITY AND MOBILITY:

Improve the connectivity and mobility of the freight system

- Freight tonnage by mode*
- Annual hours of truck delay*
- Truck reliability index*

*These or similar measures have been established in MoDOT's Tracker



PERFORMANCE MEASURES AND COMPETITIVENESS METRICS

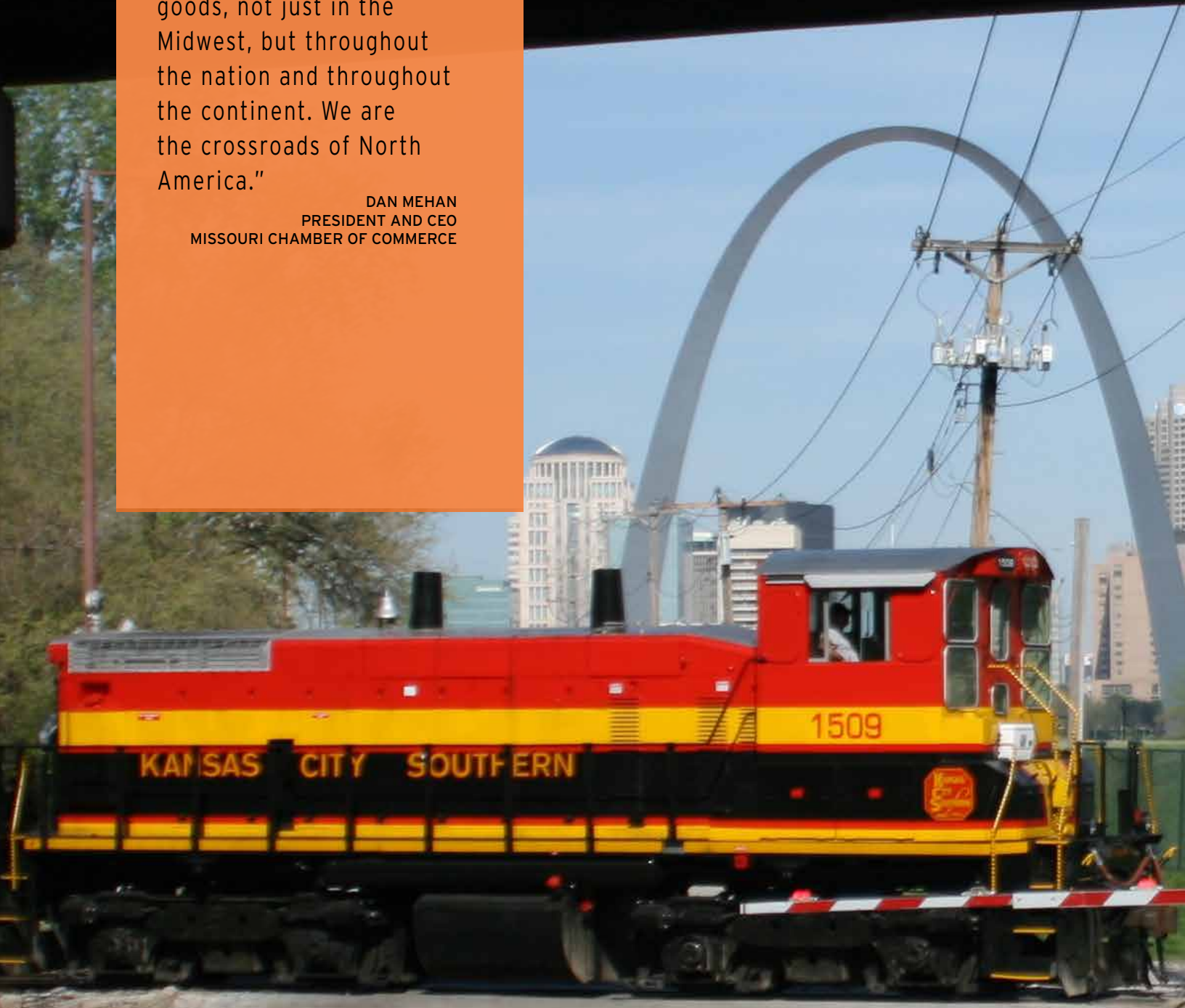
Performance measures are used across the transportation industry to evaluate transportation systems and agencies. MoDOT's rich history in performance measurement and management is best exemplified by Tracker, the department's quarterly performance measure publication.

For this Freight Plan, performance measures were established to assist with plan development, implementation, and accountability.

With Tracker as the foundation, and through consultation with the Freight Steering Committee, a limited number of strategic performance measures were identified for each of the four goals. These measures help inform the new project selection prioritization process by establishing how freight performance is, and will be, measured in Missouri.

"Missouri plays an essential role in the movement of goods, not just in the Midwest, but throughout the nation and throughout the continent. We are the crossroads of North America."

DAN MEHAN
PRESIDENT AND CEO
MISSOURI CHAMBER OF COMMERCE



STRATEGIC POLICY RECOMMENDATIONS

Each of these recommendations is supported by a series of implementation tactics, designed as a potential to-do list for MoDOT and its freight partners. Many of the tactics are long-term solutions, but several are immediately actionable.

- Work with MoDOT internal and external partners to improve multimodal connectivity
- Focus on maintaining a state of good repair
- Cultivate a long-term focus to develop comprehensive freight corridors
- Take a pragmatic approach to highway system capacity expansion, given financial constraints
- Improve the availability of truck parking
- Enhance the resiliency and maintain flexibility of the multimodal freight system to adapt to quickly changing needs
- Improve multimodal safety
- Improve the health, safety, and welfare of truck drivers
- Capitalize on the momentum created by this Freight Plan and outreach to key stakeholders
- Invest in freight infrastructure and operational improvements to drive long-term job creation
- Enhance Missouri's ability to export goods
- Expand interagency collaboration and coordination
- Use technology to improve freight movement
- Develop opportunities for maritime and air cargo

The full Missouri State Freight Plan includes:

- Chapter 1: Introduction
- Chapter 2: Stakeholder Outreach
- Chapter 3: Missouri Freight System
- Chapter 4: Freight Network Condition and Performance
- Chapter 5: Needs Assessment and Freight Forecast
- Chapter 6: Economic Context of Freight
- Chapter 7: Freight Policies, Strategies, and Institutions
- Chapter 8: The Decision-Making Process
- Chapter 9: Strategies and Recommendations
- Chapter 10: Action Plan and Implementation Strategies



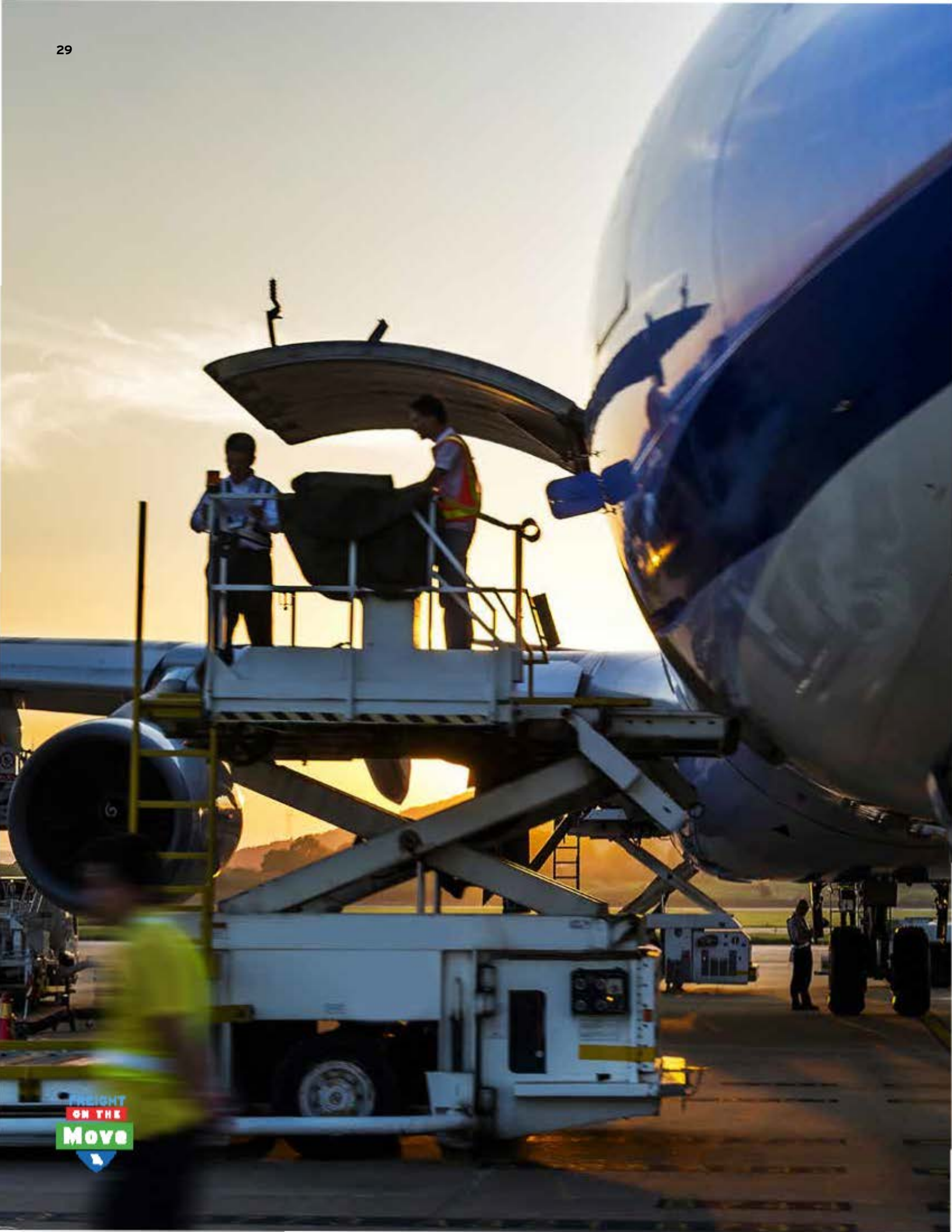
MISSOURI'S FREIGHT SYSTEM

ENSURING A STRONG FUTURE

With a growing population and a global increase in consumer demand, pressures on the nation's freight system are only going to increase. How will the State meet the needs of Missouri businesses that continue to require an efficient multimodal freight system to serve their customers?

Through the development of the Missouri State Freight Plan, MoDOT has started to meet the challenge of planning for future investments in the State's freight system to ensure Missouri's economy is strong today and in the decades to come.

Missouri has long been a leader in innovative ideas, such as dedicated truck lanes, its business approach to developing transportation performance metrics, partnering on projects with the private sector and other regional states, and focusing on ways to ensure mobility for people and freight despite funding shortfalls. As it has done before, Missouri must continue to be a leader in innovation to address its future freight needs. Through the implementation of this plan, Missouri will rise to the challenge of strengthening its role in our nation's economy and to securing its place in the global markets.





The logo for "Freight on the Move" is centered in the upper half of the image. It consists of the words "FREIGHT" and "ON THE" in white, stacked vertically within a red rectangular box. Below this box is a green rectangular box containing the word "Move" in white. At the bottom of the green box is a blue shield-shaped icon containing a white silhouette of the state of Missouri.

**FREIGHT
ON THE
Move**



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